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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,988	09/27/2004	Tamotsu Tomikawa	ZU-416	7570

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H. Jay Spiegel and Associates PC
P.O. Box 11
Mount Vernon, VA 22121

EXAMINER

PEPITONE, MICHAEL F

ART UNIT	PAPER NUMBER
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1709

MAIL DATE	DELIVERY MODE
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07/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/508,988

Applicant(s)

TOMIKAWA ET AL.

Examiner

Michael Pepitone

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/27/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: The typo “mμ” should be “μm” (¶ 124). Appropriate correction is required.

Claim Objections

Claims 1-15 are objected to because of the following informalities: The method defined in ISO4823 is not supplied, nor is it clear if it is a current measurement standard. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto *et al.* (US Patent (6,037,388).

Regarding claim 1: Hashimoto *et al.* teaches a polymerization initiator composition comprising an organoboron compound and particles inert to the organoboron compound (3:55-4:11), where the particles have diameters of 25 μm and 0.7 μm (11:10-12:5), wherein said composition is extruded (dropped) from a syringe.

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The Office realizes that all the claimed effects or physical properties are not positively stated by the reference. However, the reference teaches all of the claimed reagents. Therefore, the claimed effects and physical properties, i.e. a paste consistency of 15-100 mm, as measured using ISO4823 protocol, would inherently be achieved by a composition with all the claimed ingredients. If it is the applicants' position that this would not be the case: (1) evidence would need to be presented to support applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties and effects with only the claimed ingredients.

Regarding claims 2-6: Hashimoto *et al.* teaches a polymerization initiator composition [as set forth above with respect to claim 1] wherein the organoboron compound includes tributylborane, which is a liquid at 25 °C, [instant claim 2] (2:29) and partially oxidized tributylboron (TBB.O) [instant claim 3] (2:45-49), with polymer particles of MMA or MMA/i-BuMA copolymers (25 µm and 0.7 µm particle diameters, respectively) [instant claims 4 and 6] (11:10-12:5), as well as metal oxide (ZrO₂) particles (5 µm particle diameter) [instant claim 5] (13:36-38).

Regarding claims 9 and 10: Hashimoto *et al.* teaches a dental adhesive composition comprising an initiator paste based on an organoboron compound, specifically TBB.O [instant claim 10], 5-100 parts of a PMMA/I-BuMA copolymer inert to the organoboron (0.7 µm particle diameter), and a polymerizable monomer separated from the prepared initiator paste (14:33-52).

The Office realizes that all the claimed effects or physical properties are not positively stated by the reference. However, the reference teaches all of the claimed reagents. Therefore, the claimed effects and physical properties, i.e. an initiator paste consistency of 15-100 mm, as

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measured using ISO4823 protocol, would inherently be achieved by a composition with all the claimed ingredients. If it is the applicants' position that this would not be the case: (1) evidence would need to be presented to support applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties and effects with only the claimed ingredients.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-8, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto *et al.* (US Patent (6,037,388) as applied to claim 1 above, and further in view of Sueoka *et al.* (US Patent (6,109,484).

Regarding claims 7 and 8: Hashimoto *et al.* teaches an initiator paste [as set forth above with respect to claim 1], but does not teach a sealed container capable of extruding the initiator paste. However, Sueoka *et al.* teaches a sealed container (preventing entry of outside air) (7:44-50), specifically a syringe (8:55), with a nozzle (inner diameter 0.1-3 mm, length 1-20 mm) (3:3-15) capable of dropping its contents through the nozzle past a sealing plug (1:63-2:45). Hashimoto *et al.* and Sueoka *et al.* are combinable because they are concerned with a similar technical difficulty, namely the preparation of dental adhesives. At the time of invention a person of ordinary skill in the art would have found it obvious to have combined the dropping container (syringe), as taught by Sueoka *et al.* in the invention of Hashimoto *et al.*, and would have been motivated to do so since Sueoka *et al.* suggests that such dropping container prevents entry of outside air and can drop a required amount of a partial oxide of tributylboron initiator (7:30-50), and is an equivalent alternative means of providing a required amount of TBB.O initiator for dental adhesives.

Regarding claims 11-14: Hashimoto *et al.* teaches a dental adhesive composition comprising an initiator paste based on an organoboron compound, specifically TBB.O, 5-100 parts of a PMMA/I-BuMA copolymer inert to the organoboron (0.7 μ m particle diameter), and a polymerizable monomer separated from the prepared initiator paste (14:33-52), but does not teach kit with a sealed container capable of extruding the initiator paste, or a second container filled with polymerizable monomer. However, Sueoka *et al.* teaches a sealed container (preventing entry of outside air), specifically a syringe (8:44-55), with a nozzle (inner diameter 0.1-3 mm, length 1-20 mm) (3:3-15) capable of dropping its contents through the nozzle past a sealing plug (1:63-2:45) [instant claims 11-13]. Hashimoto *et al.* and Sueoka *et al.* are

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combinable because they are concerned with a similar technical difficulty, namely the preparation of dental adhesives. At the time of invention a person of ordinary skill in the art would have found it obvious to have combined the dropping container (syringe), as taught by Sueoka *et al.* in the invention of Hashimoto *et al.*, and would have been motivated to do so since Sueoka *et al.* suggests that such dropping container prevents entry of outside air even when preserved for a long time, can drop a required amount of chemical (TBB.O [instant claim 14])(7:30-50), and is an equivalent alternative means of providing the necessary amount of chemicals for dental adhesive compositions.

The Office takes official notice that separating the initiator from the polymerizable monomer via separate containers is well known for multi-component systems as to prevent premature polymerization of the materials prior to use (e.g. 2 part epoxy systems)

Regarding claim 15: Hashimoto *et al.* but does not teach a kit wherein the initiator paste and monomer having the same consistency. However, Sueoka *et al.* teaches that the dropping container drops the required amount of chemical (2:12-15) and it would have been obvious to have the monomer and initiator components have the same consistency, resulting in the correct amount of chemical being extruded from the syringe.

The Office takes official notice that the initiator component and polymerizable component having the same consistency is well known for multi-component systems, allowing the correct amount of each component to be extruded from their respective containers (e.g. 2 part epoxy systems)

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The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. See attached form PTO-892.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Pepitone whose telephone number is 571-270-3299. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MFP
19-July-07


MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER

231 Jul 07